

Claims 42 and 43 have been added. No additional fees are due as the total number of claims does not exceed the number for which fees have been paid.

#### Response to Claim Objections

The Examiner has objected to claims 1 and 2 owing to the misspelling of the word “wavelength.” The spelling of this term has been corrected.

#### The Rejection under 35 U.S.C. §112, First Paragraph

The Examiner has rejected claims 3 – 5, 8 - 9, 11 - 15 under 35 U.S.C. §112, first paragraph by taking the position that the claims are not supported by the specification.

In this regard, the Examiner has taken the position that these claims are unsupported owing to use of the term “equivalents” in referring to the mathematical statements contained in these claims. Applicant has amended the application to remove references to “equivalents” in these claims, recognizing that, as written, the mathematical statements are themselves equivalencies. Accordingly, Applicant respectfully submits that the amended claims are in compliance with Section 112, first paragraph in this regard, and that these grounds for rejection may be properly withdrawn.

#### The Rejection under 35 U.S.C. §112, Second Paragraph

The Examiner has rejected claims 3 – 5, and 7 - 17 under 35 U.S.C. §112, second paragraph by taking the position that the claims do not particularly point out and distinctly claim Applicant’s invention.

The Examiner has taken the position that claims 3 and 12 are indefinite owing to use of the term “equivalents” in referring to the mathematical statements contained in these claims.

As this term has been removed along with the term “any algorithm selected from the group consisting of” as suggested by the Examiner, Applicant respectfully submits that the amended claims are in compliance with Section 112, second paragraph in this regard, and that these grounds for rejection as applied to claims 3 and 12, and their dependents may be properly withdrawn.

The Examiner has taken the position that claims 7 – 9 are indefinite owing to use of the phrase “said phycocyanin” contained in these claims. Appreciating the Examiner’s careful attention to the claim language, Applicant has amended claims 7 – 9 to replace the term “said phycocyanin” with the term “said phycocyanin-pigmented algae or bacteria” such that the language of these claims are in accord with that of claim 1. Accordingly, Applicant respectfully submits that the amended claims are in compliance with Section 112, second paragraph in this regard, and that these grounds for rejection as applied to claims 7 – 9 may be properly withdrawn.

The Examiner has taken the position that claims 8 and 9 are indefinite owing to use of the phrase “the actual measured amount” contained in these claims, and that is seen as potentially confusing with the determined amount from the inventive method. Appreciating the Examiner’s helpful suggestion, Applicant has amended claims 8 and 9 to replace the term “the actual measured amount” with the term “the actual amount” to clarify that the correlation is one between the determined amount of phycocyanin-pigmented algae or bacteria using the method of the invention and the actual amount of

phycocyanin-pigmented algae or bacteria in the water. Applicant respectfully submits that this amendment clarifies the claims such that they are in compliance with Section 112, second paragraph in this regard, and that these grounds for rejection as applied to claims 8 and 9 may be properly withdrawn.

The Examiner has taken the position that claims 10 and 11 are indefinite owing to use of the phrase “the approximate” contained in these claims, and that is seen as potentially confusing with the determined amount from the inventive method. To clarify these claims in view of the Examiner’s comments, Applicant has amended claims 8 and 9 to replace the term “the approximate amount” with the term “said determined amount” to clarify that reference is to the determined amount of phycocyanin-pigmented algae or bacteria using the method of the invention as referred to in claims 1 and 5 from which claims 10 and 11 respectively depend. Applicant respectfully submits that this amendment clarifies the claims such that they are in compliance with Section 112, second paragraph in this regard, and that these grounds for rejection as applied to claims 10 and 11 may be properly withdrawn.

The Examiner has taken the position that claims 12 – 15 are indefinite owing to use of the phrase “said amount of phycocyanin” contained in line 12 of claim 12. Applicant has amended claims 12 to replace the term “said amount of phycocyanin” with the term “said amount of phycocyanin-pigmented algae or bacteria” such that the language of these claims are in accord with the preamble that of claim. Accordingly, Applicant respectfully submits that the amended claims are in compliance with Section 112, second paragraph in this regard, and that these grounds for rejection as applied to claims 12 – 15 may be properly withdrawn.

The Examiner has taken the position that claim 16 is indefinite because there is no antecedent for the terms "said measurement device" and "said remote site." In accordance with the Examiner's suggestion, Applicant has amended this claim to clarify it. Accordingly, Applicant respectfully submits that the amended claims are in compliance with Section 112, second paragraph in this regard, and that these grounds for rejection as applied to claim 16 may be properly withdrawn.

#### The Rejections Under 35 U.S.C. §102

The Examiner has rejected claims 38 and 40 under 35 U.S.C. §102 as allegedly being unpatentable as anticipated by Gitelson et al. (1995, Journal of Phycology, Vol. 31, No. 5, pages 828 - 834).

The Examiner has taken the position that Gitelson et al. teaches an equation for the calculation of biomass, which includes the sum of the reflectance above the base line (SUM) through 0.670 and 0.950  $\mu\text{m}$ , where reflectance is a measurement of reflected light from water containing the biomass. The Examiner has also stated that this biomass would have comprised biomass containing phycocyanin, and that the equation is useful for determination of the biomass of *Spirulina*, which is phycocyanin-pigmented algae.

In order to clarify the invention and to expedite prosecution of the application, Applicant has amended claims 38 and 40 by incorporating the limitations of claims 39 and 41, respectively, which claims have been cancelled without prejudice.

Applicant respectfully submits that the Gitelson et al. teaches and only teaches the use of a simple linear relationship between a total reflectance which is the sum of the reflectance above a given baseline. The Gitelson et al. is completely devoid of any

teaching or suggestion that would lead one to rationalize the reflectance quantity at two or more different wavelengths. Indeed, the Gitelson et al. reference teaches, and only teaches, measurement of a single total reflectance within a broad wavelength range and above a baseline, and thus the data gathered in accordance with the method taught by Gitelson et al. is inconsistent with the formation of ratios between measured reflectance values, as it deals only with a single collective measured value reflectance value. There is no teaching or suggestion to obtain separate reflectance values and rationalize them as in the present invention.

One of the advantages of using ratios is that it reduces the effect of light within the assayed wavelengths that is not related to the presence of phycocyanin.

Accordingly, Applicant respectfully submits that one of ordinary skill could not have arrived at the present invention proceeding from the single algorithm of Gitelson et al. without hindsight. Thus, Applicant respectfully submits that claims 38 and 40 as amended are therefore in condition for allowance.

#### The Rejections under 35 U.S.C. §103

The Examiner has rejected claims 38 - 41 under 35 U.S.C. §103 as allegedly being unpatentable as obvious in view of the teaching Gitelson et al. (1995, Journal of Phycology, Vol. 31, No. 5, pages 828 - 834).

The rejection of claims 39 and 41 is moot as a result of the cancellation of these claims, and Applicant respectfully claims 38 and 40 as amended are allowable for the reasons given above.

In summation, Applicant respectfully submits that the cited prior art would not suffice to place the claimed invention in the hands of one of ordinary skill, at the time the invention was made.

#### Newly Added Claims 42 and 43

Claims 42 and 43 have been added to claim other more specific aspects of the present invention and Applicant respectfully submits that these claims are patentable over the cited prior art of record. Support for these claims may be found for instance on pages 6 and 7 of the specification.

#### Conclusion

In view of the foregoing amendment and accompanying remarks, Applicant respectfully submit that the present application is properly in condition for allowance and may be passed to issuance upon payment of the appropriate fees.

Telephone inquiry to the undersigned in order to clarify or otherwise expedite prosecution of the subject application is respectfully encouraged.

Respectfully submitted,

ROBERT VINCENT

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By:

  
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Roger A. Gilcrest

Registration No.: 31,954

Schottenstein, Zox & Dunn Co.,  
L.P.A.  
250 West Street

Columbus, Ohio 43215  
Mailing Address:  
P.O. Box 165020  
Columbus, Ohio 43216-5020  
P: (614) 462-1055  
F: (614) 462-5135  
Email: rgilcrest@szd.com